Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. - 9. (Canceled)

10. (Currently Amended) A electromechanical transducer device comprising:

a first substrate;

a second substrate mounted on the first substrate by at least one pair of solid state hinges;

at least one first elongated electrical conductor extending in a first direction located on a surface of the first substrate facing the second substrate; and

at least one second elongated electrical conductor extending in a second direction, which is the same as the first direction, located on a surface of the second substrate facing the first substrate;

wherein:

the surface of the first substrate and the surface of the second substrate are parallel and a gap between the second substrate and the first substrate is about 15 nm or less such that the first and second elongated electrical conductors are opposed to each other at a distance permitting a detectable quantum tunneling current when a suitable electrical potential difference is applied between the first and second elongated electrical conductors; and

the at least one pair of solid state hinges are configured to permit a ~~linear~~ lateral motion of the second substrate with respect to the first substrate in a direction ~~perpendicular~~ transverse to the second direction.

11. (Canceled)

12. (Currently Amended) The electromechanical transducer device of claim 10, wherein the at least one pair of solid state hinges are resilient and are dimensioned to have a stiffness in the ~~second~~ direction of the lateral motion lower than that in a ~~direction~~

perpendicular ~~to the second~~ direction, and wherein the pair of solid state hinges are substantially aligned with each other.

13. (Currently Amended) The electromechanical transducer device of claim 10, wherein each of the at least one pair of solid state hinges comprises at least one outstanding pillar or post from one of the first and second substrates and a web integrally joining the pillar to an edge region of the other of the first and second substrates, and wherein the pair of solid state hinges are also configured to provide electrical connections to the first and second elongated conductors.

14. (Previously Presented) The electromechanical transducer device of claim 13, wherein the webs of the at least one pair of solid state hinges are in mutual co-planar alignment.

15. (Currently Amended) The electromechanical transducer device of claim 10, wherein the second substrate has an area smaller than that of the first substrate, wherein the electromechanical transducer device comprises two pairs of solid state hinges, and wherein the two solid state hinges in each pair are substantially aligned.

16. (Currently Amended) The electromechanical transducer device of claim 10, wherein:

the first and second substrates are semiconductor substrates; and

the first and second elongated electrical conductors ~~comprise elongated doped regions located on the semiconductor substrates~~ are formed using implantation.

17. (Currently Amended) The electromechanical transducer device of claim 10, wherein:

the first and second substrates are semiconductor substrates; and

the first and second elongated electrical conductors ~~comprise metal rails located on the semiconductor substrates~~ are formed using nano imprinting technology.

18. (Canceled)

19. (Previously Presented) The electromechanical transducer device of claim 10, wherein a gap between the second substrate and the first substrate is about 5 nm or less.

20. (Currently Amended) A electromechanical transducer device comprising:

a first substrate;

a second substrate mounted on the first substrate by at least one solid state hinge;

a first plurality of elongated electrical conductors extending in a first direction located on a surface of the first substrate facing the second substrate;

a second plurality of elongated electrical conductors extending in a second direction which is the same as the first direction, located on a surface of the second substrate facing the first substrate;

wherein:

the surface of the first substrate and the surface of the second substrate are parallel and a gap between the second substrate and the first substrate is about 15 nm or less such that each of the first plurality of elongated electrical conductors are located opposed to a corresponding conductor of the second plurality of elongated electrical conductors at a distance permitting a detectable quantum tunneling current when a suitable electrical potential difference is applied between the first and second elongated electrical conductors; and

the solid state hinge permits an angular rotation of the second substrate with respect to the first substrate and is also configured to provide electrical connection to at least one of the first or second plurality of elongated electrical conductors.

21. (Canceled)

22. (Previously Presented) The electromechanical transducer device of claim 20, wherein the at least one solid state hinge comprises at least one outstanding pillar or post from one of the first and second substrates and a web integrally joining the pillar to an edge region of the other of the first and second substrates.

23. (Previously Presented) The electromechanical transducer device of claim 20, wherein the second substrate has an area smaller than that of the first substrate.

24. (Currently Amended) The electromechanical transducer device of claim 20, wherein:

the first and second substrates are semiconductor substrates; and

the first plurality and the second plurality of elongated electrical conductors ~~comprise elongated doped regions located on the semiconductor substrates~~ are formed using implantation.

25. (Currently Amended) The electromechanical transducer device of claim 20, wherein:

the first and second substrates are semiconductor substrates; and

the first plurality and the second plurality of elongated electrical conductors ~~comprise metal rails located on the semiconductor substrates~~ are formed using nano imprinting technology.

26. (Currently Amended) The electromechanical transducer device of claim 20, further comprising three more solid state hinges mounting the second substrate on the first substrate, wherein:

the solid state hinges are equi-angularly spaced with respect to a center of the second substrate,

at least two of the solid state hinges are aligned with the center of the second substrate, and

the angular rotation is within the plane of the second substrate.

27. (Previously Presented) The electromechanical transducer device of claim 20, wherein the angular rotation comprises a motion perpendicular to the plane of the second substrate.

28. (Canceled)

29. (Previously Presented) The electromechanical transducer device of claim 20, wherein a gap between the second substrate and the first substrate is about 5 nm or less.

30. (Previously Presented) The electromechanical transducer device of claim 14, wherein the at least one first elongated electrical conductor and the at least one second elongated electrical conductor are a directly opposed pair aligned parallel with a plane of the webs.

31. (Previously Presented) The electromechanical transducer device of claim 22, wherein the first plurality of elongated electrical conductors and the second plurality of elongated electrical conductors are disposed in directly opposed pairs aligned parallel with a plane of the web.

32. (New) The electromechanical transducer device of claim 12, wherein the at least one pair of solid state hinges each are substantially thinner in the lateral direction than in the perpendicular direction.

33. (New) A electromechanical transducer device comprising:

a first substrate;

a second substrate mounted over the first substrate by at least one pair of solid state hinges;

a first elongated electrical conductor located over a surface of the first substrate facing the second substrate; and

a second elongated electrical conductor located over a surface of the second substrate facing the first substrate;

wherein:

the surface of the first substrate and the surface of the second substrate are substantially parallel;

a gap between the two surfaces is about 15 nm or less such that the first and second elongated electrical conductors have a detectable quantum tunneling current therebetween if a suitable electrical potential difference is applied between the first and second elongated electrical conductors;

the at least one pair of solid state hinges are configured to permit a lateral motion of the second substrate with respect to the first substrate in a direction transverse to the second direction; and

the gap does not substantially vary during said lateral motion.